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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,294	12/30/2003	John L. Vian	BING-1-1055	9179

7590 01/08/2007  
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EXAMINER
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SHAH, SAMIR M

ART UNIT	PAPER NUMBER
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2856

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
31 DAYS	01/08/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/750,294

Applicant(s)

VIAN ET AL.

Examiner

Samir M. Shah

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-58 are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 57 is objected to because of the following informalities:  
  
Note that claim 57 is presented as a “method” claim but the body of the claim includes “means” which correspond to an “apparatus” claim.
2. Appropriate correction is required.
3. Accordingly, claim 57 is treated as an “apparatus” claim in this Office Action.

### ***Election/Restrictions***

4. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims (1-17 and 58) and (18-31), drawn to a method and a product, respectively, for analyzing an engine unbalance condition including receiving vibrational data from a plurality of locations, inputting the data into an ANNCV, establishing a relationship between the data and the unbalance condition, and outputting information indicating the condition, classified in class 73, subclass 66.
  - II. Claims 32-45, drawn to a system for analyzing an engine unbalance condition including a control component, an input/output device to receive vibrational data, a processor with a first portion to receive data, a second portion to input the data into a mode, a third portion to establish a relationship between the data and the unbalance condition and a fourth

portion to output information indicating at least one of the unbalance condition and the quantity/position of corrective engine balance weights needed to achieve desirable vibrational characteristics, classified in class 700, subclass 280.

- III. Claims 46-54, drawn to a vehicle including a fuselage, a propulsion system couple to the fuselage, a monitoring system for analyzing an engine unbalance condition, wherein the monitoring system includes the system defined in claims 32-45, classified in class 700, subclass 280.
- IV. Claims 55-57, drawn to a system for analyzing an engine unbalance condition including at least one sensor for collecting vibration sensed data, a processor for receiving, analyzing and extracting information from the data, a data link, a neural network to receive and analyze the information and to determine/present the status of engine balance, classified in class 700, subclass 279.

5. The inventions are distinct, each from the other because of the following reasons:

- (a) Inventions I (claims 1-17 and 58) and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another and materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case *the apparatus as claimed can be used to*

*practice another and materially different process such as a method of correcting an engine unbalance condition wherein output information indicating the position of corrective engine balance weights needed to achieve desirable vibrational characteristics is provided and the unbalance condition is corrected by using a control component.*

(b) Inventions I (claims 1-17 and 58) and III are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another and materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case *the apparatus as claimed can be used to practice another and materially different process such as a method of correcting an engine unbalance condition in a vehicle wherein output information indicating the position of corrective engine balance weights needed to achieve desirable vibrational characteristics is provided and the unbalance condition is corrected by using a control component.*

(c) Inventions I (claims 1-17 and 58) and IV are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another and materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case *the apparatus as claimed can be used to*

*practice another and materially different process such as a remote engine unbalance monitoring/analyzing system wherein a data link over a neural network is used to detect the unbalance condition from a remote location.*

(d) Inventions I (claims 18-31) and II/III are directed to related products. The related inventions are distinct if the (1) the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function, or effect; (2) the inventions do not overlap in scope, i.e., are mutually exclusive; and (3) the inventions as claimed are not obvious variants. See MPEP § 806.05(j). In the instant case, the inventions as claimed can have a materially different design because invention II/III requires a control component and an input/output device, whereas invention I (claims 18-31) does not require a control component or an input/output device. Moreover, the inventions as claimed can have a materially different function because invention II/III requires the diagnostic information to be able to indicate the quantity and position of corrective engine balance weights needed to achieve desirable vibrational characteristics so that the control component can perform the function of correcting the engine unbalance condition whereas, invention I (claims 18-31) does not require the diagnostic information to indicate any quantity/position of corrective engine balance weights needed to achieve desirable vibrational characteristics. Furthermore, the inventions as claimed do not encompass overlapping subject matter and there is nothing of record to show them to be obvious variants.

(e) Inventions I (claims 18-31) and IV are directed to related products. The related inventions are distinct if the (1) the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function, or effect; (2) the inventions do not overlap in scope, i.e., are mutually exclusive; and (3) the inventions as claimed are not obvious variants. See MPEP § 806.05(j). In the instant case, the inventions as claimed can have a materially different design because invention IV requires at least one sensor and a data link unlike invention I (claims 18-31). Moreover, the inventions as claims can have a materially different mode of operation because invention I (claims 18-31) requires receiving vibrational data from a plurality of locations whereas, invention IV can receive vibrational data from a single location. Also, the inventions as claimed can have a materially different function because invention I (claims 18-31) requires inputting the vibrational data into an ANNCV unlike invention IV. Furthermore, the inventions as claimed do not encompass overlapping subject matter and there is nothing of record to show them to be obvious variants.

(f) Inventions II and III are directed to related products. The related inventions are distinct if the (1) the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function, or effect; (2) the inventions do not overlap in scope, i.e., are mutually exclusive; and (3) the inventions as claimed are not obvious variants. See MPEP § 806.05(j). In the instant case, the inventions as claimed can have a materially different design because invention III

requires a vehicle with a fuselage and a propulsion system operatively coupled to the fuselage unlike invention II. Moreover, the inventions as claimed can have a materially different function because invention III can perform the function of correcting the engine unbalance using the monitoring system which is operatively coupled to the propulsion system unlike invention II, which does not include the system being operatively coupled to a propulsion system. Furthermore, the inventions as claimed do not encompass overlapping subject matter and there is nothing of record to show them to be obvious variants.

(g) Inventions II and IV are directed to related products. The related inventions are distinct if the (1) the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function, or effect; (2) the inventions do not overlap in scope, i.e., are mutually exclusive; and (3) the inventions as claimed are not obvious variants. See MPEP § 806.05(j). In the instant case, the inventions as claimed can have a materially different design because invention IV requires at least one sensor and a data link unlike invention II. Moreover, the inventions as claimed can have a materially different mode of operation because invention II requires receiving vibrational data from a plurality of locations whereas, invention IV can receive vibrational data from a single location. Also, the inventions as claimed can have a materially different function because invention II can provide diagnostic information that indicates the quantity and position of corrective engine balance weights needed to achieve desirable vibrational characteristics unlike invention IV. Furthermore, the



inventions as claimed do not encompass overlapping subject matter and there is nothing of record to show them to be obvious variants.

(h) Inventions III and IV are directed to related products. The related inventions are distinct if the (1) the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function, or effect; (2) the inventions do not overlap in scope, i.e., are mutually exclusive; and (3) the inventions as claimed are not obvious variants. See MPEP § 806.05(j). In the instant case, the inventions as claimed can have a materially different design because invention IV requires at least one sensor and a data link unlike invention III. Moreover, the inventions as claimed can have a materially different mode of operation because invention III requires receiving vibrational data from a plurality of locations whereas, invention IV can receive vibrational data from a single location. Also, the inventions as claimed can have a materially different function because invention III can provide diagnostic information that indicates the quantity and position of corrective engine balance weights needed to achieve desirable vibrational characteristics unlike invention IV. Furthermore, the inventions as claimed do not encompass overlapping subject matter and there is nothing of record to show them to be obvious variants.

6. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required

because the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

7. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

8. Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

9. The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

10. Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions

unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

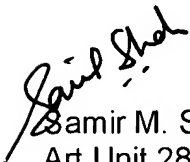
11. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).


12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samir M. Shah whose telephone number is (571) 272-2671. The examiner can normally be reached on Monday-Friday 9:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2856

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
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Art Unit 2856  
01/02/2007

  
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